

SERVICE MANUAL

COLOR TELEVISION

This Service Manual does not include MECHANICAL EXPLODED VIEW and MECHANICAL MAIN PARTS LIST.

These items will be issued in the next Supplement.

SPECIFICATION

Sistemas de recepção de cores: PAL-M/PAL-N/NTSC com seleção automática ou manual

Recepção de canais (181 canais) VHF = canais de 2 a 13 UHF = canais de 14 a 69

CATV = canais de 1a 125

Cinescópio (tubo de imagens): 14 polegadas Diagonal visual

33,5 cm (13¹/₄ polegadas)

Alimentação elétrica (FREE VOLTAGE)110 a 240V AC - 50/60Hz

Consumo de energia 70 W

2,5 W por canal Potência acústica: Peso 9,5 kg

450 x 320 x 375 mm Dimensões (LxAxP):

• Design and specifications are subject to change without notice.





To make the best use of this equipment, make sure to obey the following items when repairing (or mending).

- Do not damage or melt the tunicate of the leading wire on the AC1 side, including the power supply cord.
- Do not soil or stain the letters on the spec. inscription plates, notice labels, fuse labels, etc.
- When repairing the part extracted from the conducted side of the board pattern, fix it firmly with applying bond to the pattern and the part.
- 4. Restore the following items after repairing.
- Conditions of soldering of the wires (especially, the distance on the AC1 side).
- 2) Conditions of wiring, bundling of wires, etc.
- 3) Types of the wries.
- 4) Attachment conditions of all types of the insulation.
- After repairing, always measure the insulation resistance and perform the voltage-withstand test (See Fig-1).
- The insulation resistance must be 7.0 to 9.5 M when applying 500V per second.
- In the voltage withstand test, apply 3.0 KV for 1 minute and check that the GO lamp lights.
- * Breaking current set to 10 mA.
- * Connect the safety checker as shown in Fig-1, then measure the resistance and perform the test.
- * Do not touch the equipment during testing.
- For details of the safety checker, refer to the supplied Operation manual.

Insulation resistance: 7.0 to 9.5 M (500 V/s) Voltage-withstand: 3.0 KV for 1 minute

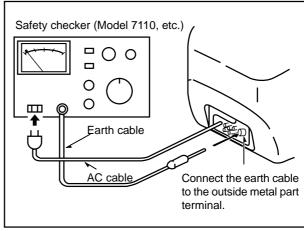


Fig-1

When servicing and checking on the TV, note the followings.

- 1. Keep the notices
 - As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.
- 2. Avoid an electric shock.
 - There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.
- 3. Use the designated parts.
 - The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety.
 - Therefore, the part which is replaced should be used the part which has the same character. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a \triangle mark, the designated parts must be used.
- Put parts and wires in the original position after assembling or wiring.
 - There are parts which use the insulation material such as a tube or tape for safety, or which are assembled so that these parts do not contact with the printed board. The inside wiring is designed not

- to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.
- 5. Take care of the cathode-ray tube.
 - By setting an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion.
 - However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.
- 6. Avoid an X-ray.
 - Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing except indicates causes rising of high voltage, and the cathode-ray tube emits an X-ray.
- 7. Perform a safety check after servicing. Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the places serviced.

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI DESCRIPTION NO.	REF. NO		KANRI DESCRIPTION NO.
CAP.CERAN	MICO	ne.	C403	C1-490-547-200	
			C403	C1-494-247-200	
C410	C1-363-471-60		C405	C1-490-522-200	
C417	C1-364-331-79	,	C405	C1-494-222-200	
C420 C421	C1-363-102-60 C1-363-102-60		C406	C1-490-510-200	CAP.SMD X7R 1KPF/50V K 0805
C421	C1-363-102-60		C406	C1-494-210-200	CAP.SMD Y5P 1KPF/50V K 0805
CTZZ	C1 303 102 00	1 C.C.D.131 1R11>=300V R	C407	C1-490-447-104	•
C427	C1-363-222-30	2 C.C.D.Y5P 2,2KPF>=50V K	C413	C1-490-522-300	
C636	C1-364-104-10	3 C.C.D.Y5V/Y5U 100KPF>=25V Z	C416	C1-265-414-552	CAP.POLYPRO 410KPF/250V J
C643	C1-364-104-10		C418	C1-265-912-952	CAP.POLYPRO MET.9,1KPF/1600V J
C717	C1-364-223-20				
C718	C1-363-102-30	0 C.C.D.Y5P 1KPF>=50V K	C501	C1-490-410-410	
0704	G1 262 102 20	0	C501 C502	C1-494-210-410	
C724 C734	C1-363-102-30 C1-361-151-30		C502 C502	C1-490-533-200 C1-494-233-200	
C735	C1-361-151-30		C503	C1-494-233-200 C1-490-510-300	
/\C800	C1-301-131-30 C1-245-102-34		C303	C1-490-310-300	CAF.SMD X/R IURFF/30V R 0003
C802	C1-363-472-80	· · · · · · · · · · · · · · · · · · ·	C504	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805
		, , , , , , , , , , , , , , , , , , , ,	C505	C1-490-510-300	
C803	C1-363-472-80	3 C.C.D.Y5U 4,7KPF/2KV M (7,5mm)	C601	C1-490-410-100	
C804	C1-363-472-80		C602	C1-490-510-200	CAP.SMD X7R 1KPF/50V K 0805
C815	C1-363-221-60	0 C.C.D.Y5P 220PF>=500V K	C602	C1-494-210-200	CAP.SMD Y5P 1KPF/50V K 0805
C816	C1-363-471-60				
C819	C1-244-472-64	1 C.C.D.Y5P 4,7KPF/1KV K (6LR)	C604	C1-490-433-004	
			C605	C1-490-547-303	
C820	C1-364-331-79	,	C607	C1-490-410-410	
C822	C1-363-102-30		C607	C1-494-210-410	
C823	C1-369-222-80	,	C610	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805
C833 C843	C1-363-102-60 C1-364-221-79		C613	C1-490-647-405	CAP.SMD Y5V 470KPF/25V Z 0805
C043	C1-304-221-73	5 C.C.D.SH ZZOFF/IRV R	C614	C1-490-522-420	
C844	C1-364-102-79	5 C.C.D.R 1KPF/1KV K	C614	C1-494-222-420	•
C845	C1-364-331-79		C621	C1-490-510-200	
C901	C1-363-471-60		C621	C1-494-210-200	
C904	C1-363-102-80				•
C905	C1-363-102-60		C622	C1-490-410-410	CAP. SMD X7R 100KPF/25V K 805
			C622	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805
			C624	C1-490-515-300	
CAP.POLY			C624	C1-494-215-300	
g2.01	a	4	C625	C1-490-510-200	CAP.SMD X7R 1KPF/50V K 0805
C301	C1-331-104-00		acor	G1 404 010 000	CAR OND MED 1MDE/EOM M 000E
C303 C409	C1-330-224-22 C1-330-122-10		C625 C629	C1-494-210-200	
C409	C1-330-122-10 C1-330-103-51	· · · · · · · · · · · · · · · · · · ·	C629	C1-490-510-300 C1-490-510-200	
C411	C1-330-103-31 C1-330-122-10		C631	C1-494-210-200	
0111	CI 330 122 10	1 0.1011111 1/2111/1000 0	C633	C1-490-410-410	
C423	C1-330-104-42	1 C.POLYMET 100KPF/250V J			
C424	C1-330-473-52		C633	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805
C801	C1-265-104-07	3 C.POLY.100KPF/250VAC M(SUP.X1)	C637	C1-490-510-300	
C809	C1-330-273-10	3 C.POLYMET 27KPF/63V J	C638	C1-490-510-200	CAP.SMD X7R 1KPF/50V K 0805
C827	C1-330-474-90	4 C.POLYMET 470KPF/63V K	C638	C1-494-210-200	
			C640	C1-490-410-410	CAP. SMD X7R 100KPF/25V K 805
C902	C1-330-104-42	1 C.POLYMET 100KPF/250V J	9610	a	G1D GWD WED 400WDD/05W W 0005
			C640	C1-494-210-410	
CAP.SMD			C644 C645	C1-490-510-300 C1-490-510-300	
CAP. SMD			C652	C1-490-310-300 C1-490-410-100	•
C102	C1-490-410-41	0 CAP. SMD X7R 100KPF/25V K 805	C702	C1-490-410-100	
C102	C1-494-210-41				
C105	C1-490-510-30		C704	C1-490-415-104	CAP.SMD NPO 150PF/50V J 0805
C106	C1-490-510-30	O CAP.SMD X7R 10KPF/50V K 0805	C705	C1-490-415-104	CAP.SMD NPO 150PF/50V J 0805
C108	C1-490-410-10	O CAP.SMD NPO 100PF/50V K 0805	C706	C1-490-415-104	
			C707	C1-490-415-104	
C109	C1-490-410-10		C709	C1-490-433-000	CAP.SMD NPO 33PF/50V K 0805
C203	C1-490-410-41				
C203	C1-494-210-41		C710	C1-490-433-000	•
C205 C206	C1-490-522-30		C711	C1-490-433-000	
CZUO	C1-490-410-41	O CAP. SMD X7R 100KPF/25V K 805	C712 C719	C1-490-433-000 C1-490-433-000	
C206	C1-494-210-41	0 CAP.SMD Y5P 100KPF/25V K 0805	C719 C721	C1-490-433-000	
C208	C1-494-210-41		C/21	51 170 433 000	311.5115 HIO 3311/30V R 0003
C209	C1-490-547-30	•	C722	C1-490-433-000	CAP.SMD NPO 33PF/50V K 0805
C210	C1-490-410-41		C725	C1-490-447-100	· .
C210	C1-494-210-41		C727	C1-490-415-104	
			C728	C1-490-415-104	
C211	C1-490-510-30		C729	C1-490-410-410	CAP. SMD X7R 100KPF/25V K 805
C216	C1-490-447-00				
C217	C1-490-447-00	•	C729	C1-494-210-410	
C304	C1-490-510-30		C730	C1-490-447-100	
C401	C1-490-433-00	4 CAP.SMD NPO 33PF/50V J 0805	C731	C1-490-410-410	
C402	C1 400 422 00	A CAD CMD NDO 22DE/EOU T 000E	C731 C732	C1-494-210-410	
C4UZ	C1-490-433-00	4 CAP.SMD NPO 33PF/50V J 0805	C/32	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805

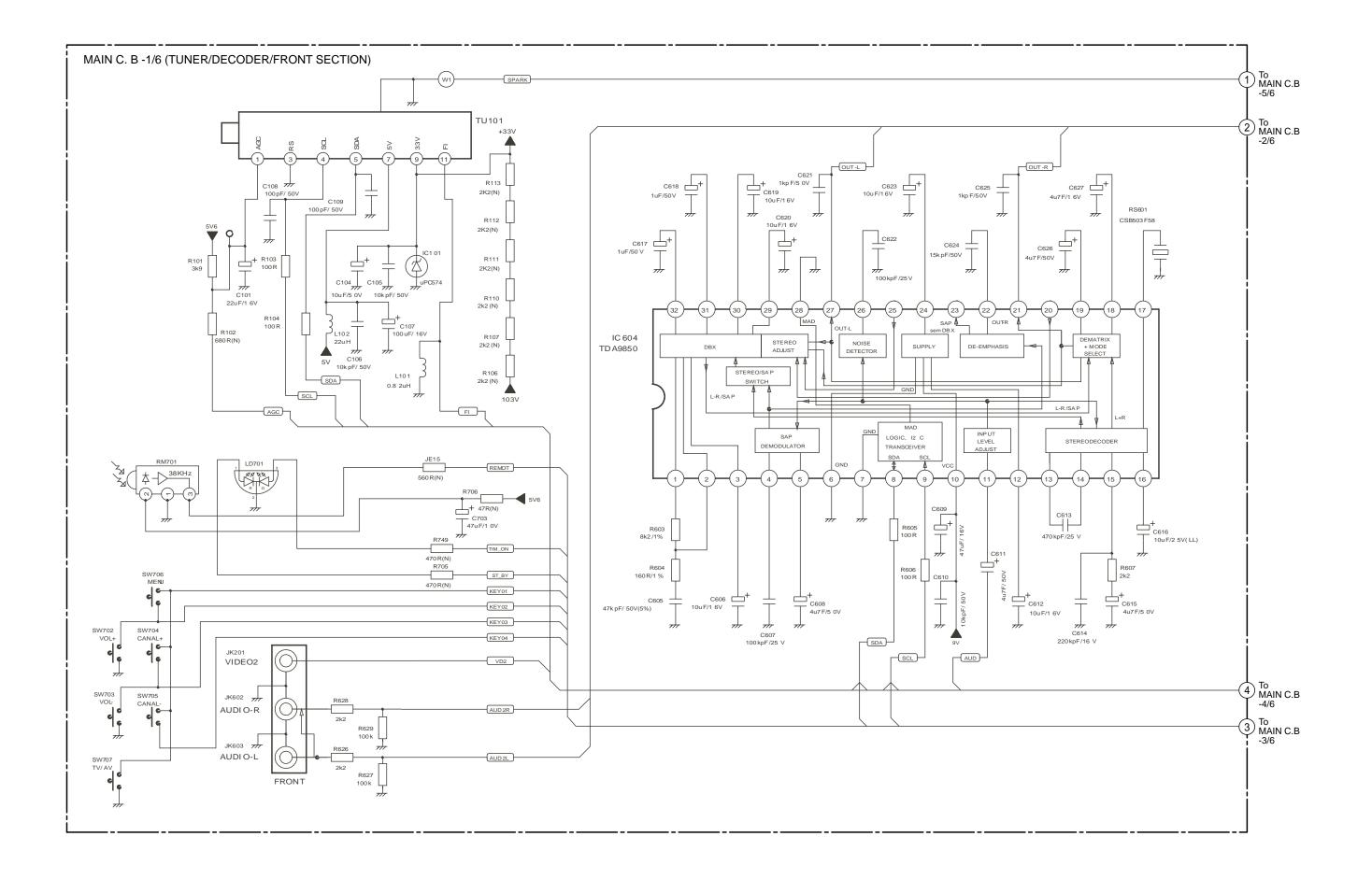
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO)	PART NO.	KANRI NO.	DESCRIPTION
C808 C808 C810 C811 C811	C1-490-533-20 C1-494-233-20 C1-490-547-30 C1-490-522-20 C1-494-222-20	0 CAI 3 CAI 0 CAI	P.SMD X7R 3,3KPF/50V K 080 P.SMD Y5P 3,3KPF/50V K 080 P.SMD X7R 47KPF/25V K 0805 P.SMD X7R 2,2KPF/50V K 080 P.SMD Y5P 2,2KPF/50V K 080	5 C806 C807 5 C812	C1 C1 C1	-292-221-05 -380-479-52 -380-479-52 -380-470-22 -297-101-93	2 2 4	ELCO 220UF / 385V (30X30) ELCO G1 4,7UF/50V M ELCO G1 4,7UF/50V M ELCO G1 47UF >= 16V M ELCO 100UF/160V HR
C813 C813 C818 C824 C824	C1-490-410-41 C1-494-210-41 C1-490-522-30 C1-490-510-20 C1-494-210-20	0 CAI 0 CAI 0 CAI	P. SMD X7R 100KPF/25V K 80 P.SMD Y5P 100KPF/25V K 080 P.SMD X7R 22KPF/50V K 0805 P.SMD X7R 1KPF/50V K 0805 P.SMD Y5P 1KPF/50V K 0805	5 C831	C1 C1 C1	-297-330-92 -297-102-33 -380-101-32 -380-470-22 -380-101-22	4 8 4	ELCO 33UF/160V HR ELCO 1000UF/25V HR ELCO 100UF/25V M ELCO G1 47UF >= 16V M ELCO G1 100UF >= 16V M
C826 C837 C841 C847	C1-490-410-100 C1-490-510-300 C1-490-510-300 C1-490-547-420	0 CAI	P.SMD NPO 100PF/50V K 0805 P.SMD X7R 10KPF/50V K 0805 P.SMD X7R 10KPF/50V K 0805 P.SMD X7R 470KPF/16V K 080	C839 C840	C1 C1 C1	-380-221-23 -380-101-22 -291-102-31 -291-102-31 -380-470-22	8 8 7	ELCO 220UF/16V M 6,3X11mm ELCO G1 100UF >= 16V M ELCO 1000UF/16V M 10X16 ELCO 1000UF/16V M 10X20 ELCO 47UF/16V M
CAP.ELCO				C903	C1	-291-220-01	7	ELCO 22UF/250V M 12,5X25
C101 C103	C1-380-220-22 C1-380-478-62	2 ELO	CO G1 22UF >= 16V M	FILTRO				
C104 C107 C201	C1-380-100-52 C1-380-101-22 C1-380-100-22	8 ELC	CO 10UF/50V M CO G1 100UF >= 16V M CO G1 10UF >= 16V M	CF201 CF601 CF601	C1 C1	-421-506-60 -421-507-60 -421-500-40	0 :	FILTRO CERAMICO TPS4.5MB FILTRO CERAMICO SFSH4.5MDB FILTRO CERAMICO SFE- 4.5MB
C204 C207 C212 C302	C1-380-229-623 C1-380-100-223 C1-380-229-623 C1-380-101-63	1 ELC 2 ELC	CO 2,2UF/100V M 5x11mm CO G1 10UF >= 16V M CO 2,2UF/100V M 5x11mm CO 100UF/35V M 6,3X11	SF101 CONECTO		-421-507-20	0 .	FILTRO CERAMICO M1971M
C404 C412 C415 C419 C425	C1-380-109-62: C1-380-101-22: C1-380-479-73: C1-380-109-62: C1-380-471-22:	8 EL(2 EL(2 EL(9 EL(CO 1UF/100V M CO G1 100UF >= 16V M CO 4,7UF/160V M CO 1UF/100V M CO 470UF/16V M	CN401 CN401 CN501 CN601	C1 C1 C1	-647-661-80 -631-028-30 -647-659-50 -647-659-60	4 1 0 0	CABO 18AWG 70MM PR AMARRACAO BASE CONECTORA 04VIAS CJT.CHICOTE 26AWG 3V 270MM CABO FLAT 2.54 24AWG 5V 320MM BASE CONECTORA 4VIAS 180 MIS
C426 C603 C606 C608 C609 C611	C1-380-471-22 C1-380-100-22 C1-380-100-22 C1-380-479-52 C1-380-470-22 C1-380-479-52	1 EL(1 EL(2 EL(4 EL(CO 470UF/16V M CO G1 10UF >= 16V M CO G1 10UF >= 16V M CO G1 4,7UF/50V M CO G1 47UF >= 16V M CO G1 4,7UF/50V M	CN801 CN802 EP601 EP601 EP601	C1 C1 C1	-633-212-70 -633-211-20 -633-212-50 -633-213-00	2 1 0 0	BASE CONECTORA 2VIAS BASE CONECTORA 2VIAS JACK PHONE STEREO JACK PHONE JACK PHONE
C612 C615 C616 C617 C618	C1-380-100-22 C1-380-479-52 C1-380-100-52 C1-380-109-52 C1-380-109-52	1 EL(2 EL(5 EL(1 EL(CO G1 10UF >= 16V M CO G1 4,7UF/50V M CO 10UF/16V M LL CO G1 1UF >= 50V M CO G1 1UF >= 50V M	EP601 JK601 JK601 JK602	C1 C1 C1	-633-212-50 -633-212-40 -633-213-10 -633-212-60 -631-281-20	0 0	JACK PHONE STEREO CJT.TOMADA 3RCA HT C/CHAVE CJT.TOMADA 3RCA HT C/CHAVE CJT.TOMADA 3RCA HT C/CHAVE GUIA P/FIOS 05VIAS CINESCOPIO
C619 C620 C623 C626 C627	C1-380-100-22 C1-380-100-22 C1-380-100-22 C1-380-479-52 C1-380-479-52	1 ELC 1 ELC 2 ELC	CO G1 10UF >= 16V M CO G1 10UF >= 16V M CO G1 10UF >= 16V M CO G1 4,7UF/50V M CO G1 4,7UF/50V M	W1 W2 W2	C1	-647-659-70 -641-000-16 -641-000-16	7	CABO MONT.1VC/TER.18AWG MR460 CABO MON.1VC/TER.18AWG MR 320 CABO MON.1VC/TER.18AWG MR 320
C628 C630 C632 C634 C635	C1-380-100-22 C1-380-470-22 C1-380-478-62 C1-380-109-62 C1-380-221-23	1 EL(4 EL(2 EL(2 EL(CO G1 10UF >= 16V M CO G1 47UF >= 16V M CO 0,47UF/100V M CO 1UF/100V M CO 220UF/16V M 6,3X11mm	D201 D301 D301 D401	C1 C1 C1	-414-621-90 -410-430-01 -415-172-20 -415-161-90 -415-167-70	5 i 1 i 9 i	DIODO 1N-4148 75V SINAL DIODO 1N-4004 RETIFICADOR DIODO UF-4004 DIODO BYD-33G DIODO RAP.PASS.A VIDRO RGP10G
C639 C641 C642 C646 C647	C1-380-478-62: C1-380-109-62: C1-380-221-23: C1-291-222-42: C1-380-109-52:	2 ELC 1 ELC 2 ELC	CO 0,47UF/100V M CO 1UF/100V M CO 220UF/16V M 6,3X11mm CO 2200UF/25V M CO G1 1UF >= 50V M	D401 D402 D402 D402 D402 D403	C1 C1 C1	-129-314-19 -415-161-90 -415-167-70 -129-314-19 -415-161-90	9 I 1 I 9 I	DIODO SK-4F1/06 RETIFICADOR DIODO BYD-33G DIODO RAP.PASS.A VIDRO RGP10G DIODO SK-4F1/06 RETIFICADOR DIODO BYD-33G
C648 C649 C650 C651 C653	C1-380-109-52: C1-380-109-52: C1-380-109-52: C1-380-229-62: C1-380-229-62:	1 ELC 1 ELC 2 ELC	CO G1 1UF >= 50V M CO 2,2UF/100V M 5x11mm CO 2,2UF/100V M 5x11mm	D403 D403 D404 D404 D404	C1 C1 C1	-415-167-70 -129-314-19 -415-161-90 -415-167-70 -129-314-19	9 i 9 i 1 i	DIODO RAP.PASS.A VIDRO RGP10G DIODO SK-4F1/06 RETIFICADOR DIODO BYD-33G DIODO RAP.PASS.A VIDRO RGP10G DIODO SK-4F1/06 RETIFICADOR
C655 C701 C703 C708 C716	C1-380-100-22 C1-380-109-62 C1-380-470-92 C1-380-109-62 C1-380-221-23	2 ELC 2 ELC 2 ELC	CO G1 10UF >= 16V M CO 1UF/100V M CO 47UF/10V M CO 1UF/100V M CO 220UF/16V M 6,3X11mm	D405 D406 D601 D601 D701	C1 C1 C1	-414-621-90 -414-621-90 -410-430-01 -415-172-20 -414-621-90	2 i 5 i 1 i	DIODO 1N-4148 75V SINAL DIODO 1N-4148 75V SINAL DIODO 1N-4004 RETIFICADOR DIODO UF-4004 DIODO 1N-4148 75V SINAL
C720 C723 C733	C1-380-101-22 C1-380-100-22 C1-380-478-52	1 ELO	CO G1 100UF >= 16V M CO G1 10UF >= 16V M CO G1 0,47UF/50V M	D801 D802 D803	C1	-414-621-90 -414-621-90 -414-621-90	2	DIODO 1N-4148 75V SINAL DIODO 1N-4148 75V SINAL DIODO 1N-4148 75V SINAL

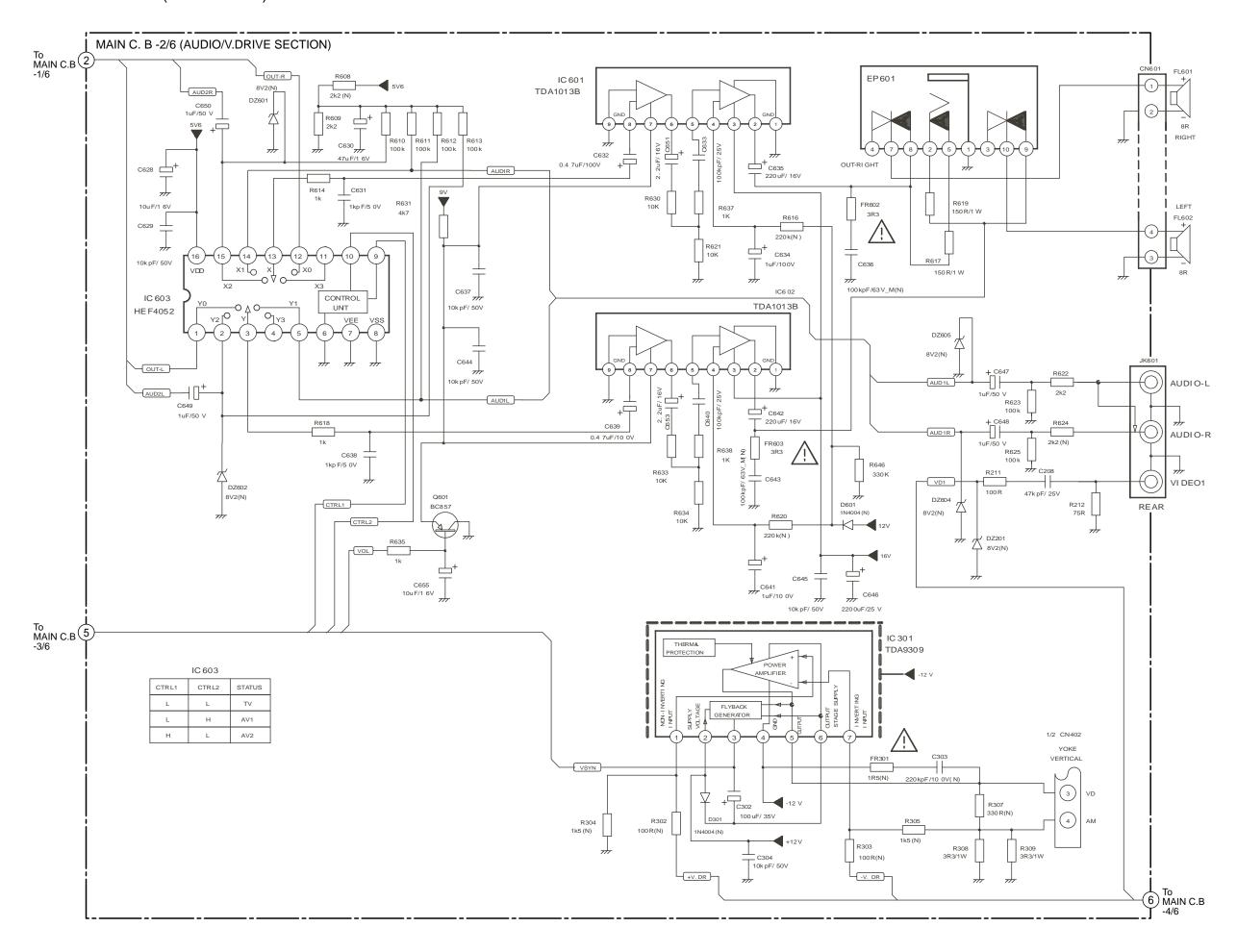
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D804 D805 D805 D806 D806	C1-414-621-902 C1-414-621-903 C1-414-621-905 C1-415-161-910 C1-415-167-701	B DIODO B DIODO DIODO	1N-4148 75V SINAL BAV-21 DE CHAVEAMENTO 1SS244T77 BYD-33J RAP.PASS.A VIDRO RGP10G	FB701 FB801 FB802 FB803 FB803	C1-427-011-600 C1-427-010-820 C1-427-010-820 C1-427-010-820 C1-427-011-000	FERR FERR FERR	ITE BEAD 3,5x6,5-0,8H .BEAD BL02RN2R6T4 DP.RAD .BEAD BL02RN2R6T4 DP.RAD .BEAD BL02RN2R6T4 DP.RAD ITE 5,1X1,5X4
D806 D807 D807	C1-129-314-199 C1-129-309-899 C1-129-313-899	DIODO DIODO	SK-4F1/06 RETIFICADOR MR-856 SK-3GH06 RETIFICADOR	FB804	C1-427-011-000	FERR:	ITE 5,1X1,5X4
D808 D808	C1-415-163-601 C1-129-313-899		BYM-26D SK-3GH06 RETIFICADOR	ALTO FALA	ANTE		
D809 D809 D809 D810 D810	C1-411-431-007 C1-415-168-001 C1-129-314-099 C1-411-431-007 C1-415-168-001	DIODO DIODO DIODO	1N-5062 PASSIVADO A VIDRO GP15K SK-1/08 RETIFICADOR 1N-5062 PASSIVADO A VIDRO GP15K	FL601 FL602 FUSISTOR	C1-510-454-010 C1-510-454-010		FALANTE 120x50mm 5W 8R FALANTE 120x50mm 5W 8R
D810 D811 D811 D811 D812	C1-129-314-099 C1-411-431-007 C1-415-168-001 C1-129-314-099 C1-411-431-007	DIODO DIODO DIODO DIODO DIODO	SK-1/08 RETIFICADOR 1N-5062 PASSIVADO A VIDRO GP15K SK-1/08 RETIFICADOR 1N-5062	↑FR301 ↑FR401 ↑FR402 ↑FR403 ↑FR404	C1-183-515-917 C1-185-510-914 C1-183-510-917 C1-183-510-917 C1-183-522-017	FUSIS FUSIS FUSIS FUSIS	STOR 1/2W 1,5R J STOR 1W 1R 5% N STOR 1/2W 1R J STOR 1/2W 1R J STOR 1/2W 22R J
D812 D812 D813 D813 D813	C1-415-168-001 C1-129-314-099 C1-415-161-910 C1-415-167-701 C1-129-314-199	DIODO DIODO DIODO	PASSIVADO A VIDRO GP15K SK-1/08 RETIFICADOR BYD-33J RAP.PASS.A VIDRO RGP10G SK-4F1/06 RETIFICADOR	↑FR602 ↑FR603 ↑FR801 ↑FR802 ↑FR803	C1-183-533-917 C1-183-533-917 C1-183-510-917 C1-183-539-017 C1-183-510-217	FUSIS FUSIS FUSIS	STOR 1/2W 3,3R J STOR 1/2W 3,3R J STOR 1/2W 1R J STOR 1/2W 39R J STOR 1/2W 1K J
D814 D815 D816 D901	C1-414-621-902 C1-414-621-902 C1-414-621-902 C1-414-621-903	DIODO DIODO	1N-4148 75V SINAL 1N-4148 75V SINAL 1N-4148 75V SINAL BAV-21	<u>_</u> FR804	C1-183-539-017	' FUSIS	STOR 1/2W 39R J
D901 D902 D902 D903	C1-414-621-905 C1-414-621-905 C1-414-621-905 C1-414-621-903	B DIODO B DIODO B DIODO	DE CHAVEAMENTO 1SS244T77 BAV-21 BAV-21 BAV-21 BAV-21	IC804 IC703 IC601 IC602 IC901	C1-146-100-353 C1-149-394-899 C1-149-379-299 C1-149-379-299 C1-149-388-799	I.C. I.C. I.C.	7805 (METAL) M51943B TDA-1013B TDA-1013B TDA-6107Q-N1
D903 NTC801 PTC801	C1-414-621-905 C1-125-707-400 C1-125-707-100	RES.C	DE CHAVEAMENTO 1SS244T77 OEF.NEG.NTC LIM.CORR.PICO 59209-T80-B10	IC501 IC802 IC801 IC101 IC301	C1-149-390-999 C1-146-300-103 C1-149-392-099 C1-149-302-499 C1-149-389-299	I.C. I.C. I.C.	TDA8841/N2 TL-431-BCLP UC-3842BN UPC-574/KA-33V TDA-9309 AMP.VT.C/ACOPL.DC
DIODO ZEN	IER			IC803	C1-139-999-427	PHOTO	O COUPLER PC817X1 A (DIP)
DZ201 DZ202 DZ401 DZ601 DZ602	C1-415-169-801 C1-415-169-801 C1-415-169-801 C1-415-169-801 C1-415-169-801	DIODO DIODO DIODO	BZX79C8V2 BZX79C8V2 BZX79C8V2 BZX79C8V2 BZX79C8V2	IC803	C1-139-999-159	PHOTO	O COUPLER PS-2501-1-H
DZ604 DZ605 DZ701 DZ702 DZ703	C1-415-169-801 C1-415-169-801 C1-415-169-301 C1-415-169-401 C1-415-169-301	DIODO DIODO	BZX79C8V2 BZX79C8V2 BZX79C4V7 BZX79C5V1 BZX79C4V7	IC701 IC603 IC702 IC604 IC701	C1-710-100-085 C1-710-100-023 C1-710-100-062 C1-710-100-063 C1-710-100-095	I.C. I.C. I.C.	MC68HC908TV24 SMD HEF4052B M1/BU4052BCF SMD MN24C08MN6 SMD TDA-9850T XC68HC08TV24CP-AIWA
DZ704	C1-415-169-501		BZX79C5V6	INDUTOR/E	BOBINA		
DZ705 DZ801 DZ802 DZ803	C1-415-169-501 C1-415-171-901 C1-415-171-901 C1-415-169-301	DIODO DIODO	BZX79C5V6 BZX79C18V BZX79C18V BZX79C4V7	L101 L102 L201	C1-311-604-200 C1-479-920-034 C1-479-903-734 C1-479-908-634	INDU' INDU' INDU'	NA DESMAGNETIZADORA TOR 0,82UH K TOR FIXO 22UH K AXIAL TOR FIXO 15UH K AXIAL
DZ804 DZ805 DZ806 DZ806 DZ807	C1-415-171-901 C1-415-169-301 C1-415-166-801 C1-415-165-701 C1-415-169-801	DIODO DIODO DIODO	BZX79C18V BZX79C4V7 BZX79B9V1 MTZ-JT77-9,1C BZX79C8V2	L701 L702 L703	C1-319-951-400 C1-479-906-734 C1-479-906-734 C1-479-909-334	INDU'	TOR 22UH TOR FIXO 2,2UH K AXIAL TOR FIXO 2,2UH K AXIAL TOR FIXO 33UH K AXIAL
DZ808 DZ809 DZ901	C1-415-169-001 C1-415-171-901 C1-415-169-801	DIODO	BZX79C3V6 BZX79C18V BZX79C8V2	L801 L803 LF801	C1-479-907-634 C1-319-953-000 C1-312-400-900	INDU'	TOR FIXO 5,6UH K AXIAL TOR 33UH RO DE LINHA ELF18N012A
FUSIVEL				DIODO LEI)		
	C1-461-058-002 C1-461-052-002		CAO RET.20AG 4A/250V CAO RET.20AG 1A/250V	LD701	C1-459-524-100	DIODO	O LED BICOLOR SLP-581D-51
FERRITE				TRANSISTO	DR		

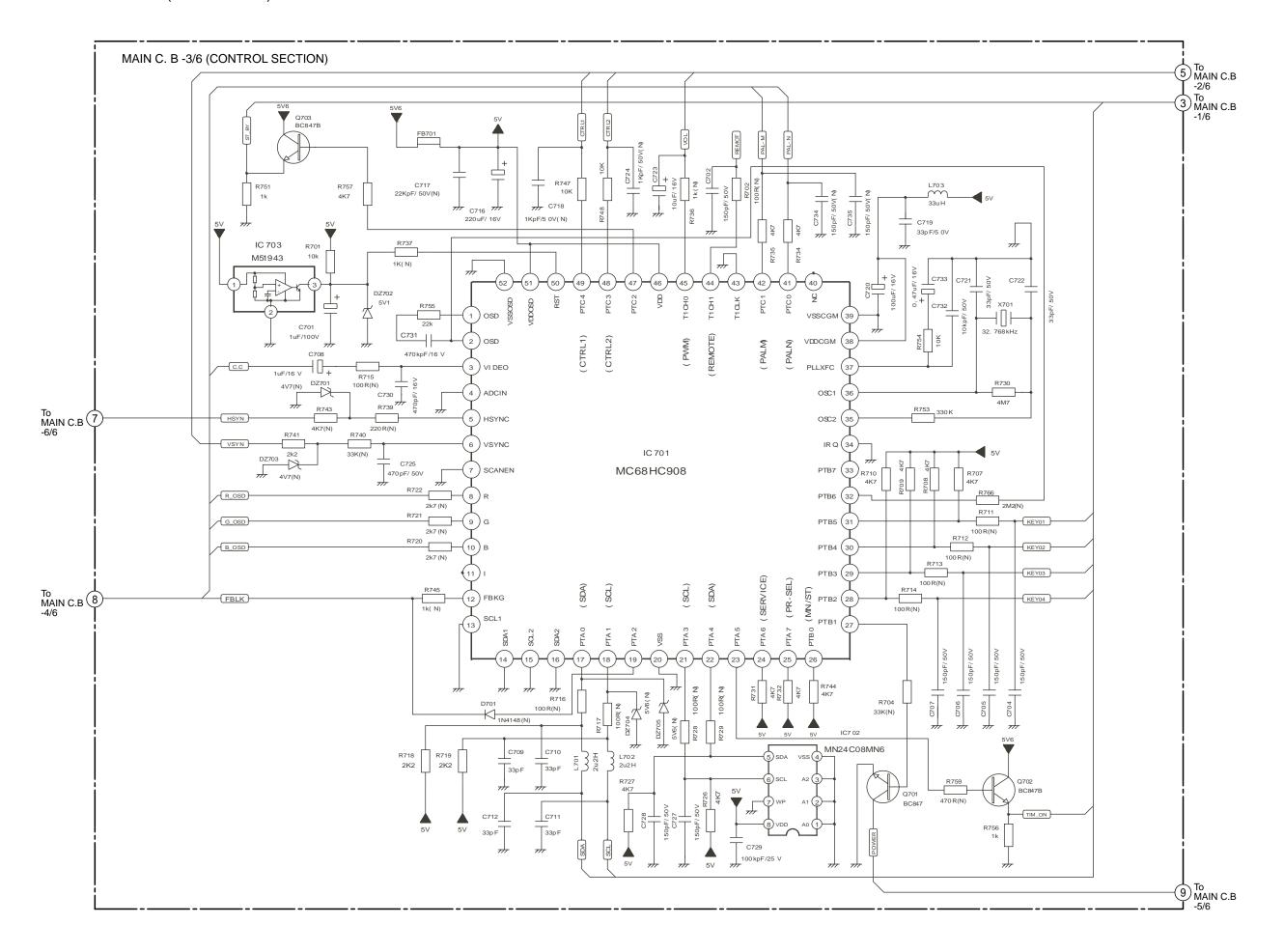
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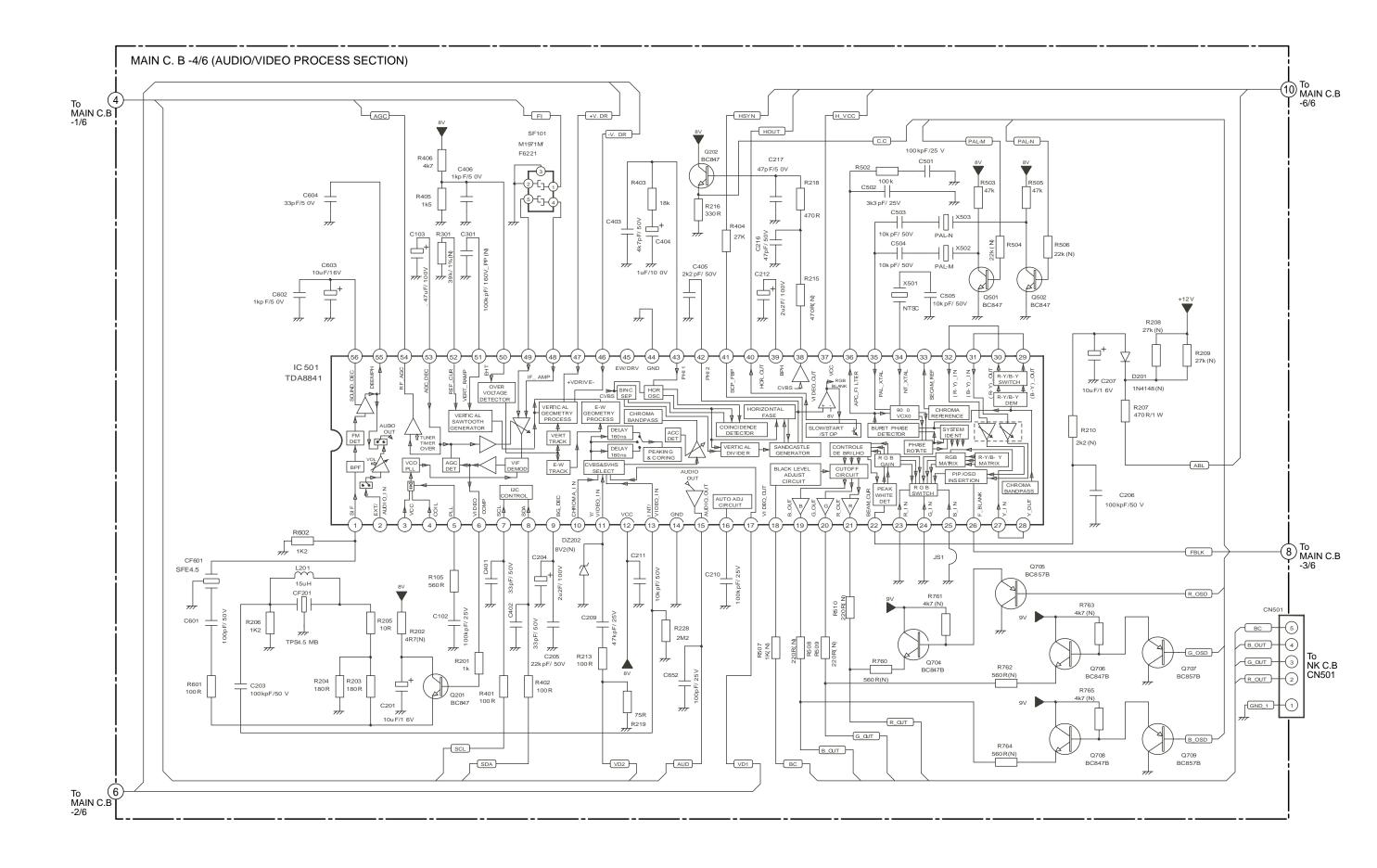
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
Q802	C1-139-999-188	RANSIST	DR 2SD2061E/F	R705	C1-183-547-19	2 RES.META	AL FILME 1/2W 470R 5% N
Q801	C1-139-999-351		DR 2SK-2545	R706	C1-183-547-09		AL FILME 1/2W 47R 5% N
Q804	C1-320-030-402	TRANSIST	DR BC-327/16	R711	C1-183-510-19		AL FILME 1/2W 100R 5% N
<u></u>	C1-139-999-302		DR BU-2506DX	R712	C1-183-510-19		AL FILME 1/2W 100R 5% N
<u></u> 10801	C1-139-999-404	TRANSIST(OR MOS FET FL7KM-12A	R713	C1-183-510-19	2 RES.META	AL FILME 1/2W 100R 5% N
Q401	C1-139-608-600) TRANSIST	OR MPS-A42	R714	C1-183-510-19	2 RES.META	AL FILME 1/2W 100R 5% N
¥	01 100 000	, 1144,0101		R715	C1-183-510-19		AL FILME 1/2W 100R 5% N
				R716	C1-183-510-19		AL FILME 1/2W 100R 5% N
TRANSISTO	R SMD			R717	C1-183-510-19		AL FILME 1/2W 100R 5% N
Q201	C1-700-100-003	R TRANSIST	OR SMD BC-847B	R720	C1-183-527-29	Z KES.MEIA	AL FILME 1/2W 2,7K 5% N
Q202	C1-700-100-003		OR SMD BC-847B	R721	C1-183-527-29	2 RES.META	AL FILME 1/2W 2,7K 5% N
Q501	C1-700-100-003	TRANSIST(OR SMD BC-847B	R722	C1-183-527-29	2 RES.META	AL FILME 1/2W 2,7K 5% N
Q502	C1-700-100-003		OR SMD BC-847B	R728	C1-183-510-19		AL FILME 1/2W 100R 5% N
Q701	C1-700-100-003	3 TRANSIST	DR SMD BC-847B	R729 R736	C1-183-510-193 C1-183-510-293		AL FILME 1/2W 100R 5% N AL FILME 1/2W 1K 5% N
Q702	C1-700-100-003	RANSIST	OR SMD BC-847B	R/30	C1-103-510-29.	Z KES.HEIH	IL FILME 1/2W IK 5% N
Q703	C1-700-100-003		OR SMD BC-847B	R737	C1-183-510-29	2 RES.META	AL FILME 1/2W 1K 5% N
Q704	C1-700-100-003		DR SMD BC-847B	R739	C1-183-522-19		AL FILME 1/2W 220R 5% N
Q706	C1-700-100-003		OR SMD BC-847B	R740	C1-183-533-39:		AL FILME 1/2W 33K 5% N
Q708	C1-700-100-003	3 TRANSIST	DR SMD BC-847B	R743 R745	C1-183-547-29: C1-183-510-29:		AL FILME 1/2W 4,7K 5% N AL FILME 1/2W 1K 5% N
Q803	C1-700-100-003	TRANSIST	DR SMD BC-847B	K/45	C1-103-510-29.	Z KES.HEIH	IL FILME 1/2W IK 5% N
Q601	C1-700-100-004		OR SMD BC-857B	R749	C1-183-547-19	2 RES.META	AL FILME 1/2W 470R 5% N
Q705	C1-700-100-004		OR SMD BC-857B	R759	C1-183-547-19		AL FILME 1/2W 470R 5% N
Q707	C1-700-100-004		OR SMD BC-857B	R760	C1-183-556-19		AL FILME 1/2W 560R 5% N
Q709	C1-700-100-004	TRANSIST	OR SMD BC-857B	R761 R762	C1-183-547-29: C1-183-556-19:		AL FILME 1/2W 4,7K 5% N AL FILME 1/2W 560R 5% N
				102	C1-103-330-13.	Z KES.HEIA	II FILME 1/2W SOOK 5% N
RESISTOR				R763	C1-183-547-29	2 RES.META	AL FILME 1/2W 4,7K 5% N
				R764	C1-183-556-19		AL FILME 1/2W 560R 5% N
R102	C1-183-568-192		FILME 1/2W 680R 5% N	R765	C1-183-547-29		AL FILME 1/2W 4,7K 5% N
R106 R107	C1-183-522-292 C1-183-522-292		G FILME 1/2W 2,2K 5% N G FILME 1/2W 2,2K 5% N	R766 R801	C1-183-522-59: C1-184-527-31:		AL FILME 1/2W 2,2M 5% N AL FILME 2W 27K 5% N
R110	C1-183-522-292		FILME 1/2W 2,2K 5% N FILME 1/2W 2,2K 5% N	KOUI	C1-104-527-51.	Z KES.HEIA	N %C A/Z WZ andia di
R111	C1-183-522-292		L FILME 1/2W 2,2K 5% N	R804	C1-183-518-29	2 RES.META	AL FILME 1/2W 1,8K 5% N
				R810	C1-184-527-81		AL FILME 2W 0,27R 5% N
R112	C1-183-522-292		FILME 1/2W 2,2K 5% N	R812	C1-184-547-31		AL FILME 2W 47K 5% N
R113 R202	C1-183-522-292 C1-183-547-992		5 FILME 1/2W 2,2K 5% N 5 FILME 1/2W 4,7R 5% N	R813 R814	C1-183-568-39: C1-183-515-19:		AL FILME 1/2W 68K 5% N AL FILME 1/2W 150R 5% N
R202 R207	C1-185-547-145		FILME 1/2W 4,/R 5% N FILME 1W 470R 5%	K014	C1-103-515-19.	Z KES.HEIA	IL FILME 1/2W 150K 5% N
R208	C1-183-527-392		L FILME 1/2W 27K 5% N	<u></u>	C1-183-568-548	RES.META	AL GLAZED 6,8M
				<u></u> ♠R816	C1-189-111-33		CISAO 0,6W 113K 0,5%
R209	C1-183-527-392		I FILME 1/2W 27K 5% N	<u>1</u> R817	C1-189-128-23		CISAO 0,6W 2,8K 0,5%
R210 R215	C1-183-522-292 C1-183-547-192		G FILME 1/2W 2,2K 5% N G FILME 1/2W 470R 5% N	R820 R821	C1-185-547-14		AL FILME 1W 470R 5% AL FILME 3W 33R 5% N
R301	C1-189-139-331		ISAO 0,4W 39K 1% N	NOZI	CI 107 555 04	O KEDINEIA	III I I I I I I I I I I I I I I I I I
R302	C1-183-510-192		L FILME 1/2W 100R 5% N	R823	C1-185-510-24		AL FILME 1W 1K 5%
5000	G1 100 510 100			R824	C1-183-533-99		AL FILME 1/2W 3,3R 5% N
R303 R304	C1-183-510-192 C1-183-515-292		L FILME 1/2W 100R 5% N L FILME 1/2W 1,5K 5% N	R825 R826	C1-183-510-09: C1-183-510-39:		AL FILME 1/2W 10R 5% N AL.FILME 1/2W 10K 5% N
R304 R305	C1-183-515-292		FILME 1/2W 1,5K 5% N	R827	C1-174-051-02		5W 1K 5% V-SQM
R307	C1-183-533-192		L.FILME 1/2W 330R 5% N	11027	01 1,1 001 01		5 III 5 v v 5g
R308	C1-185-533-912	RES.M.FI	LME 1W 3,3R 5% N	R828	C1-183-518-29		AL FILME 1/2W 1,8K 5% N
D200	G1 105 533 016	DDG M DT	IMP 111 2 2D El M	R829	C1-183-518-29		AL FILME 1/2W 1,8K 5% N
R309 R408	C1-185-533-912 C1-183-539-192		LME 1W 3,3R 5% N L FILME 1/2W 390R 5% N	R830 R831	C1-183-518-29: C1-183-510-39:		AL FILME 1/2W 1,8K 5% N AL.FILME 1/2W 10K 5% N
R410	C1-183-556-292		FILME 1/2W 5,6K 5% N	R901	C1-183-510-39		AL FILME 1/2W 10R 5% N
R411	C1-187-547-212		L FILME 3W 4,7K 5% N				,
R412	C1-183-522-992	RES.META	L FILME 1/2W 2,2R 5% N	R902	C1-183-510-19		AL FILME 1/2W 100R 5% N
D413	G1 102 FFC 201	DEC MEETS	DIIMD 1/OU FOR E9. N	R903	C1-183-510-19		AL FILME 1/2W 100R 5% N POS.1/2W 1.5K 5% N
R413 R414	C1-183-556-392 C1-183-515-392		G FILME 1/2W 56K 5% N G FILME 1/2W 15K 5% N	R904 R905	C1-183-615-21 C1-183-615-21		POS.1/2W 1,5K 5% N
R415	C1-185-515-345		L FILME 1W 15K 5%	R906	C1-183-615-21		POS.1/2W 1,5K 5% N
R416	C1-183-547-092		L FILME 1/2W 47R 5% N				
R504	C1-183-522-392	RES.META	L FILME 1/2W 22K 5% N	R907	C1-183-510-29	2 RES.META	AL FILME 1/2W 1K 5% N
R506	C1-183-522-392	י אדי אורייאו	_ FILME 1/2W 22K 5% N				
R500	C1-183-522-392		L FILME 1/2W 22K 3% N	RES.SMD			
R508	C1-183-522-192	RES.META	L FILME 1/2W 220R 5% N				
R509	C1-183-522-192		L FILME 1/2W 220R 5% N	R101	C1-502-539-20		3,9K 0805
R510	C1-183-522-192	RES.META	L FILME 1/2W 220R 5% N	R103	C1-502-510-10:		100R 5% 0805
R608	C1-183-522-292	RES.META	L FILME 1/2W 2,2K 5% N	R104 R105	C1-502-510-103 C1-502-556-103		100R 5% 0805 560R 5% N 0805
R616	C1-183-522-492		FILME 1/2W 220K 5% N	R201	C1-502-510-20		1K 5% 0805
R617	C1-185-515-145		FILME 1W 150R 5%				
R619	C1-185-515-145		FILME 1W 150R 5%	R203	C1-502-518-10		180R 5% 0805
R620	C1-183-522-492	KES.META	L FILME 1/2W 220K 5% N	R204 R205	C1-502-518-103 C1-502-510-003		180R 5% 0805 10R 5% 0805
R624	C1-183-522-292	RES.META	L FILME 1/2W 2,2K 5% N	R205	C1-502-512-20		1,2K 5% 0805
R702	C1-183-510-192	RES.META	L FILME 1/2W 100R 5% N	R211	C1-502-510-10		100R 5% 0805
R704	C1-183-533-392	RES.META	L FILME 1/2W 33K 5% N				

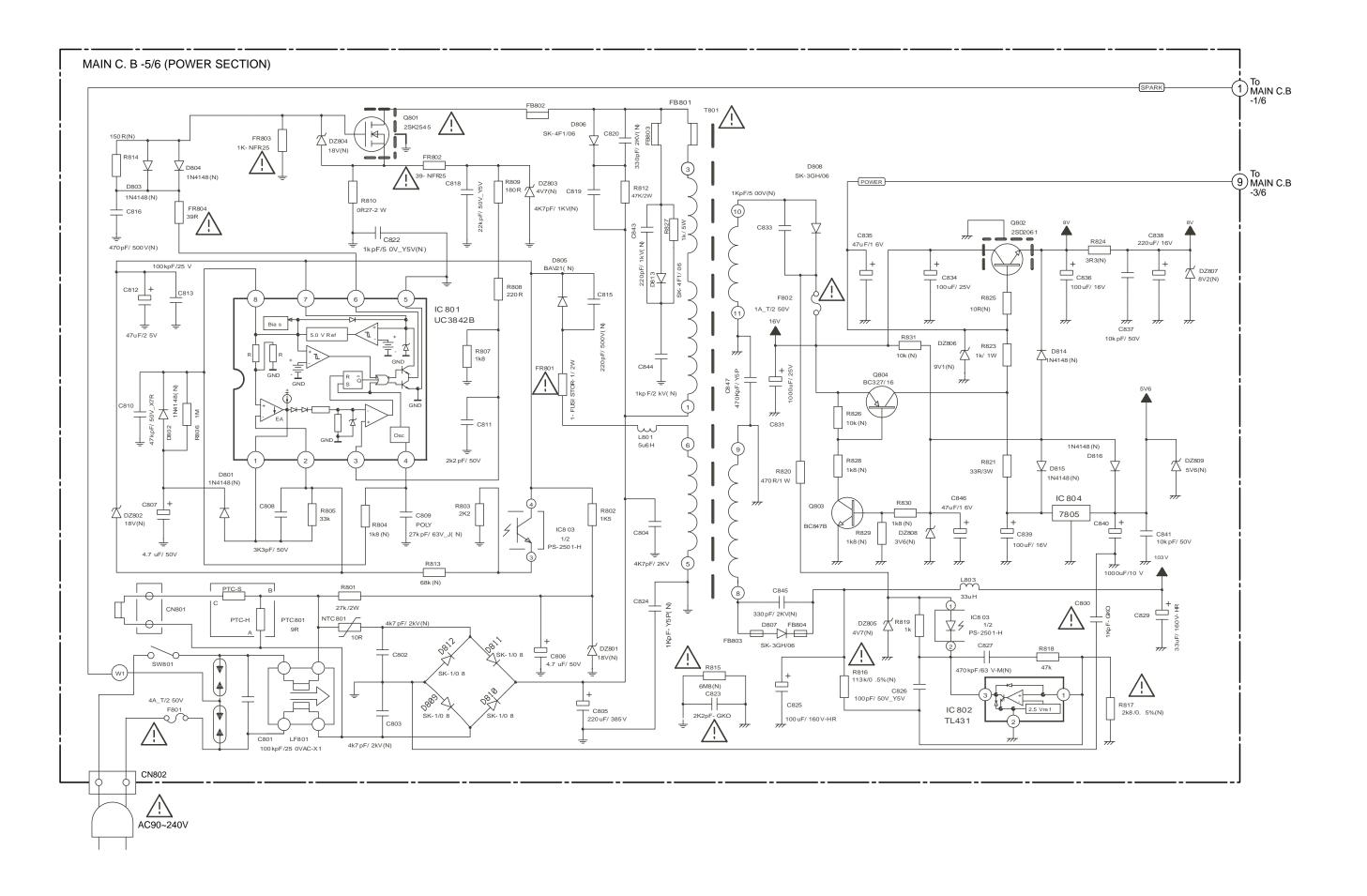
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R212	C1-502-575-002	RES.SMD 75R 5% 0805	R756	C1-502-510-202	RES.SM	D 1K 5% 0805		C1-644-505-10	0 CABC	DE FORCA 2X18X2 C/CONECT
R213	C1-502-510-102	RES.SMD 100R 5% 0805	R757	C1-502-547-202		D 4,7K 5% 0805		C1-437-203-20		NA TELESCOPICA
R216	C1-502-533-102	RES.SMD 330R 5% 0805	R802	C1-502-515-202	RES.SM	D 1,5K 5% 0805		C1-437-203-20	2 ANTE	NA TELESCOPICA
R218	C1-502-547-102	RES.SMD 470R 5% 0805	R803	C1-502-522-202		D 2,2K 5% 0805		C1-437-203-20		NA TELESCOPICA 4SECOES
R219	C1-502-575-002	RES.SMD 75R 5% 0805	R805	C1-502-533-302		D 33K 5% 0805		C1-437-203-20		NA TELESCOPICA 3SECOES
R228 R401	C1-502-522-502 C1-502-510-102	RES.SMD 2,2M 5% 0805 RES.SMD 100R 5% 0805	R806 R807	C1-502-510-502 C1-502-518-202		D 1M 5% 0805 D 1,8K 5% 0805		C1-437-203-20 C1-437-203-20		NA TELESCOPICA 4SECOES NA TELESCOPICA 5SECOES
R401	C1-502-510-102	RES.SMD 100R 5% 0805	R808	C1-502-518-202		D 220R 5% 0805		C1-437-203-20		NA TELESCOPICA SSECOES
R403	C1-502-518-302	RES.SMD 18K 5% 0805	R809	C1-502-518-102		D 180R 5% 0805		C1-633-206-00		ERSOR IMPEDANCIA CRF-07/A
R404	C1-502-527-302	RES.SMD 27K 5% 0805	R818	C1-502-547-302	RES.SM	D 47K 5% 0805		C1-027-218-58	0 CONT	ROLE REMOTO MONTADO
R405	C1-502-515-202	RES.SMD 1,5K 5% 0805	R819	C1-502-510-202	RES.SM	D 1K 5% 0805				
R406	C1-502-547-202	RES.SMD 4,7K 5% 0805								
R407 R409	C1-502-547-202 C1-502-533-102	RES.SMD 4,7K 5% 0805 RES.SMD 330R 5% 0805	MODULO							
R418	C1-502-527-302	RES.SMD 27K 5% 0805	HODOLO							
			RM701	C1-271-205-400	RECEPT	OR IR SBX1981-72P				
R502	C1-502-510-402	RES.SMD 100K 5% 0805								
R503	C1-502-547-302	RES.SMD 47K 5% 0805	OHA HE							
R505 R601	C1-502-547-302 C1-502-510-102	RES.SMD 47K 5% 0805 RES.SMD 100R 5% 0805	CHAVE							
R601	C1-502-510-102	RES.SMD 1,2K 5% 0805	SW701	C1-449-009-400	CHAVE	DE TOQUE 7,0MM 260q				
1002	C1 302 312 202	KEB.BID 1,2K 30 0003	SW701	C1-449-009-200		DE TOQUE 7,0MM 260g				
R603	C1-502-182-202	RES.SMD 8,2K 1% 0805	SW702	C1-449-009-400		DE TOQUE 7,0MM 260g				
R604	C1-502-116-102	RES.SMD 160R 1% 0805	SW702	C1-449-009-200		DE TOQUE 7,0MM 260g				
R605	C1-502-510-102	RES.SMD 100R 5% 0805	SW703	C1-449-009-400	CHAVE	DE TOQUE 7,0MM 260g				
R606 R607	C1-502-510-102 C1-502-522-202	RES.SMD 100R 5% 0805 RES.SMD 2,2K 5% 0805	SW703	C1-449-009-200	CHYAL	DE TOQUE 7,0MM 260g				
1007	C1-30Z-3ZZ-Z0Z	KES.SHD 2,2K 3% 0003	SW703	C1-449-009-400		DE TOQUE 7,0MM 260g				
R609	C1-502-522-202	RES.SMD 2,2K 5% 0805	SW704	C1-449-009-200		DE TOQUE 7,0MM 260g				
R610	C1-502-510-402	RES.SMD 100K 5% 0805	SW705	C1-449-009-400		DE TOQUE 7,0MM 260g				
R611	C1-502-510-402	RES.SMD 100K 5% 0805	SW705	C1-449-009-200	CHAVE	DE TOQUE 7,0MM 260g				
R612 R613	C1-502-510-402 C1-502-510-402	RES.SMD 100K 5% 0805 RES.SMD 100K 5% 0805	SW706	C1-449-009-400	CHYAL	DE TOQUE 7,0MM 260q				
K013	C1-302-310-402	RES.5HD 1000 5% 0005	SW706	C1-449-009-200		DE TOQUE 7,0MM 260g				
R614	C1-502-510-202	RES.SMD 1K 5% 0805	SW801	C1-440-090-053						
R618	C1-502-510-202	RES.SMD 1K 5% 0805								
R621	C1-502-510-302	RES.SMD 10K 5% 0805								
R622	C1-502-522-202	RES.SMD 2,2K 5% 0805	TRAFO							
R623	C1-502-510-402	RES.SMD 100K 5% 0805	T401	C1-353-101-200	TRAFO	DRIVE HT				
R625	C1-502-510-402	RES.SMD 100K 5% 0805	/\T402	C1-355-215-800		FLY BACK 14"KFT2AA293X				
R626	C1-502-522-202	RES.SMD 2,2K 5% 0805	<u> </u>	C1-356-005-600	TRAFO	CHAVEAMENTO				
R627	C1-502-510-402	RES.SMD 100K 5% 0805								
R628 R629	C1-502-522-202 C1-502-510-402	RES.SMD 2,2K 5% 0805 RES.SMD 100K 5% 0805	SINTONIZA	NDOD.						
ROZJ	C1-302-310-402	KES.SHD 100K 3% 0003	SINIONIZA	ADOR						
R630	C1-502-510-302	RES.SMD 10K 5% 0805		C1-271-503-800		IZADOR 181CH UV-1336S/AF				
R631	C1-502-547-202	RES.SMD 4,7K 5% 0805	TU101	C1-271-503-500	SINTON	IZADOR IIC 5V ENV56D33G3				
R633 R634	C1-502-510-302 C1-502-510-302	RES.SMD 10K 5% 0805 RES.SMD 10K 5% 0805								
R635	C1-502-510-202	RES.SMD 1K 5% 0805	PEPCI CIN	NESCOPIO						
R637	C1-502-510-202	RES.SMD 1K 5% 0805	<u>_</u> V901	C1-408-010-300		NESCOPIO S/CHICOTE				
R638 R646	C1-502-510-202 C1-502-533-402	RES.SMD 1K 5% 0805 RES.SMD 330K 5% 0805		C1-027-221-802 C1-027-221-822		I MANUAL/MONT CINESCOPIO I SMD CINESCOPIO				
R701	C1-502-533-402	RES.SMD 10K 5% 0805		C1-027-221-822		I AUTOMATICO CINESCOPIO				
R707	C1-502-547-202	RES.SMD 4,7K 5% 0805		C1-107-221-802		CINESCOPIO 9PECAS				
n	G4 505 5:5	DDG 0100		an con						
R708 R709	C1-502-547-202 C1-502-547-202	RES.SMD 4,7K 5% 0805 RES.SMD 4,7K 5% 0805		C1-682-021-400	MOLA D	O ATERRAMENTO DO CRT				
R710	C1-502-547-202	RES.SMD 4,7K 5% 0805								
R718	C1-502-522-202	RES.SMD 2,2K 5% 0805	CONECTOR							
R719	C1-502-522-202	RES.SMD 2,2K 5% 0805								
D706	01 500 547 000	DEG GMD 4 377 F% 000F		C1-638-100-912	SOQUET	E P/CINESCOPIO 1SMS11S				
R726 R727	C1-502-547-202 C1-502-547-202	RES.SMD 4,7K 5% 0805 RES.SMD 4,7K 5% 0805								
R730	C1-502-547-502	RES.SMD 4,7M 5% 0805	CRISTAL							
R731	C1-502-547-202	RES.SMD 4,7K 5% 0805								
R732	C1-502-547-202	RES.SMD 4,7K 5% 0805	RS601	C1-421-506-100		ADOR CERAMICO CSB-503F58				
R734	C1-502-547-202	RES.SMD 4,7K 5% 0805	X501 X502	C1-425-009-200 C1-425-009-100		L NTSC 3.579545 SE / S L PAL-M 3.575611 SSP / S				
R735	C1-502-547-202	RES.SMD 4,7K 5% 0805	X502 X503	C1-425-009-100 C1-425-009-300		L PAL-M 3.575611 55P / 5 L PAL-N 3.582056 SSP / S				
R741	C1-502-522-202	RES.SMD 2,2K 5% 0805	X701	C1-425-011-400		L 32,768KHZ				
R744	C1-502-547-202	RES.SMD 4,7K 5% 0805				•				
R747	C1-502-510-302	RES.SMD 10K 5% 0805								
DEAC	Q1 F00 F10 000	DEG GMD 107 50 0005	PEPCI PRI	INCIPAL						
R748 R751	C1-502-510-302 C1-502-510-202	RES.SMD 10K 5% 0805 RES.SMD 1K 5% 0805		C1-027-221-801	ר.דיי סמ	I MAN/MONT PRINCIPAL				
R753	C1-502-533-402	RES.SMD 330K 5% 0805		C1-027-221-801		I SMD PRINCIPAL				
R754	C1-502-510-302	RES.SMD 10K 5% 0805		C1-027-221-811	CJT.PC	I AUTOMATICO PRINCIPAL				
R755	C1-502-522-302	RES.SMD 22K 5% 0805		C1-107-221-801	PCI PR	INCIPAL				

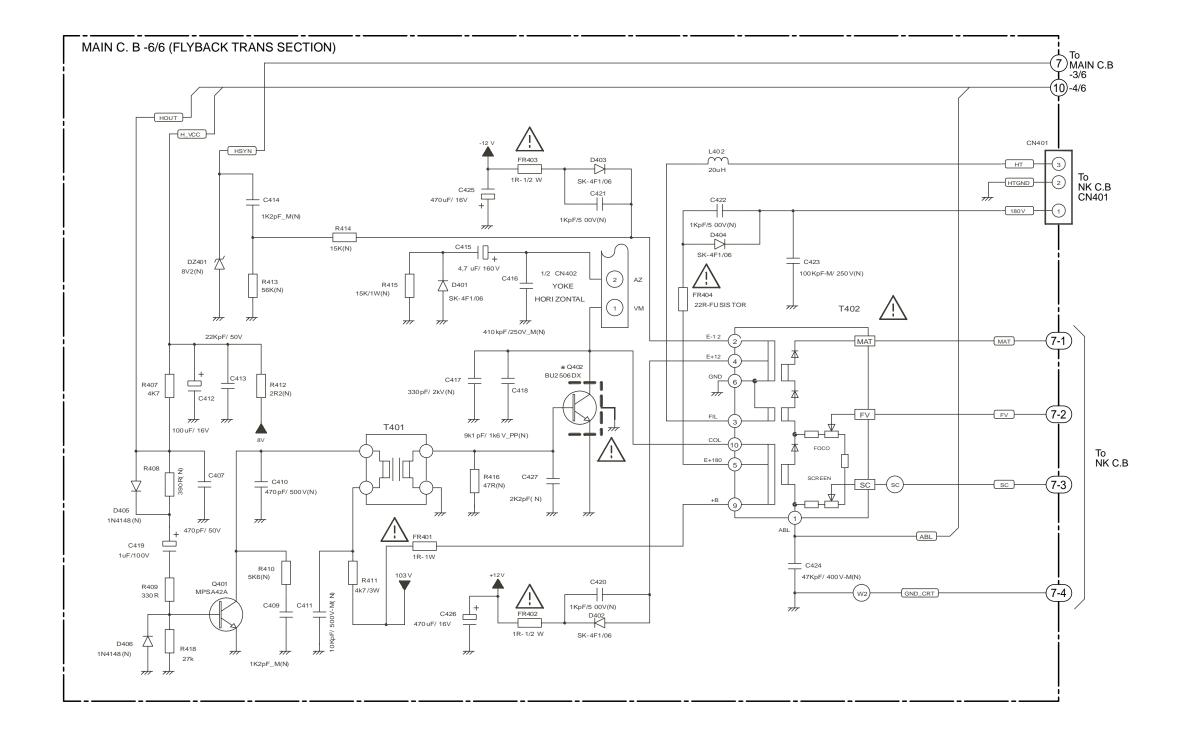


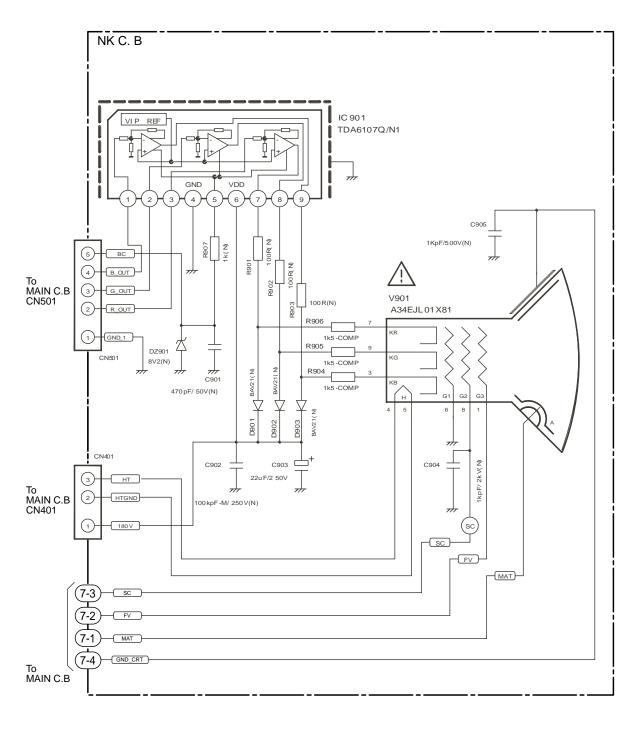


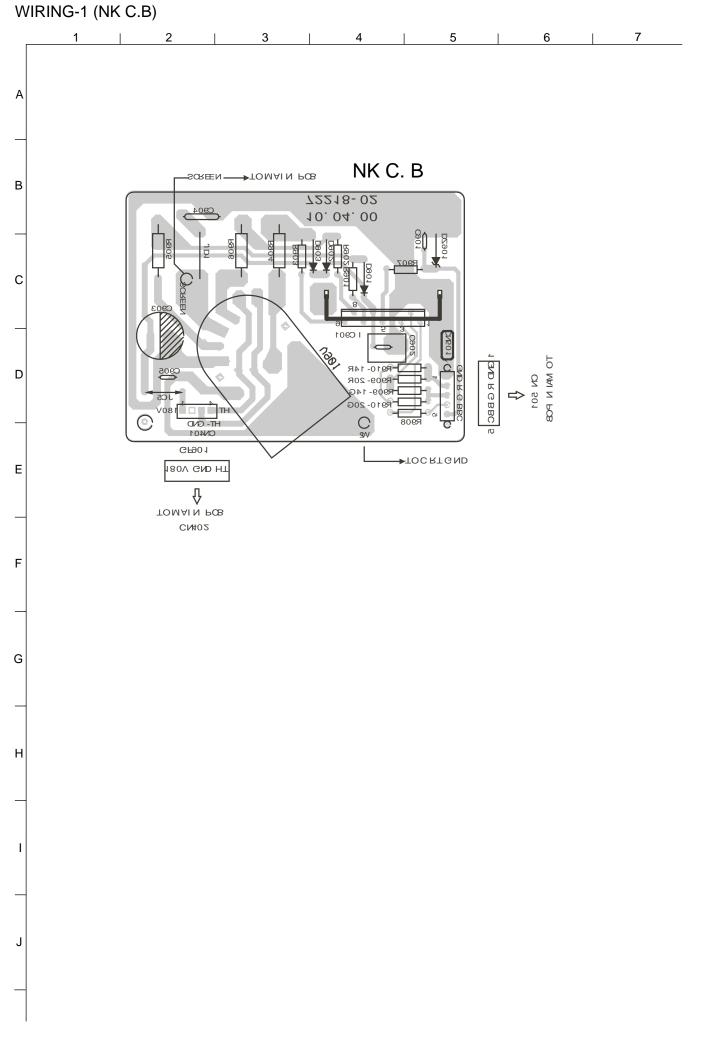


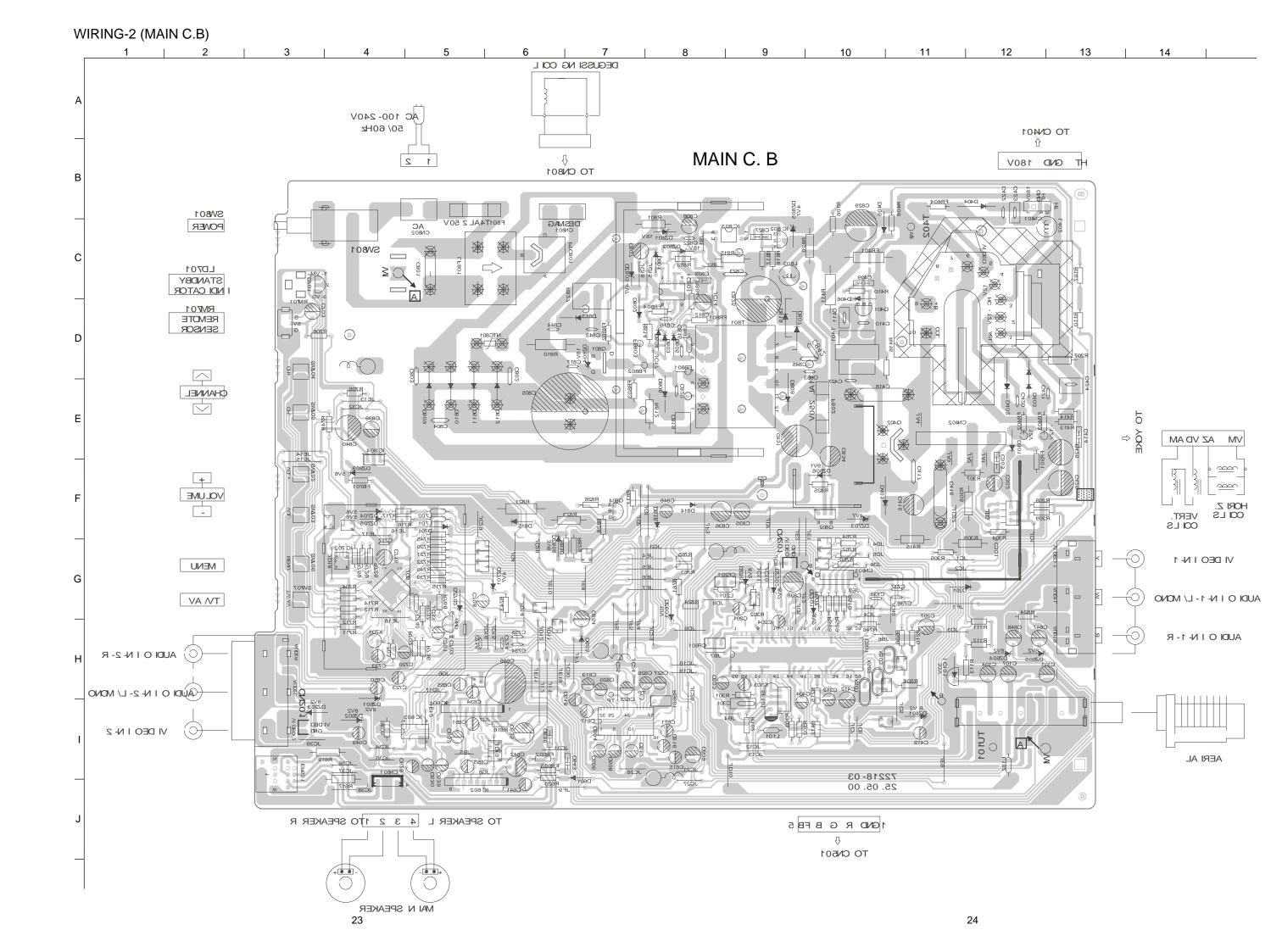




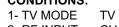








WAVEFORM **CONDITIONS:** 3- SOUND 4-MANIS 5- PICTURE 1 - PINO # 6 IC501 500mV/Div. 20.0µs/Div



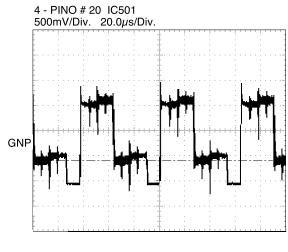
CH 3 90dB 2- RF INPUT MONO

VOL. MIN. 127V 60Hz CONTR.MAX

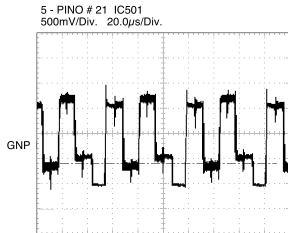
BRIGHT - 50% **COLOR - 30%**

SHARP - 50%

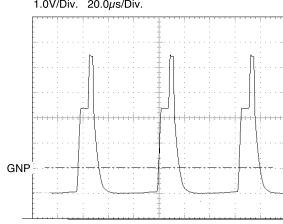
6- RUN TIME 1h

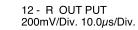


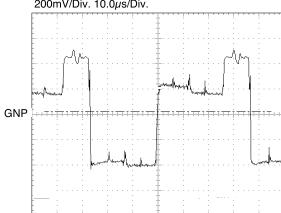


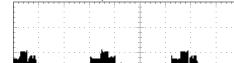


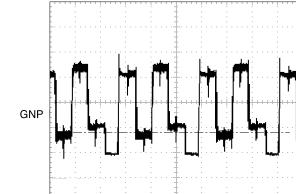
8 - PINO # 41 IC501 1.0V/Div. 20.0μs/Div.



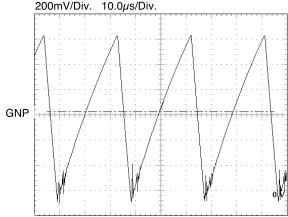




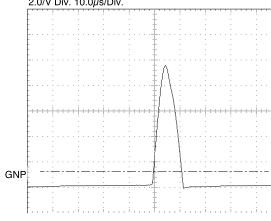




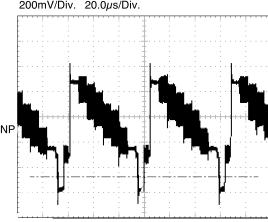
9 - PINO # 4 IC801 200mV/Div. 10.0µs/Div.



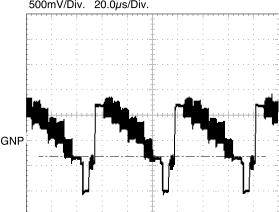
13 - COL Q402 (X100) 2.0/V Div. 10.0*μ*s/Div.

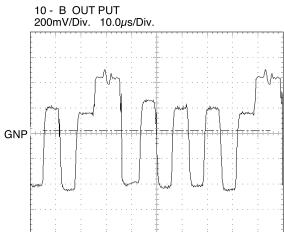


2 - PINO #13 IC501 200mV/Div. 20.0μs/Div.

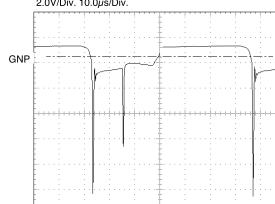


6 - PINO # 38 IC501 500mV/Div. 20.0μs/Div.

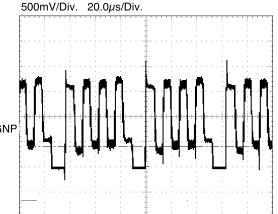




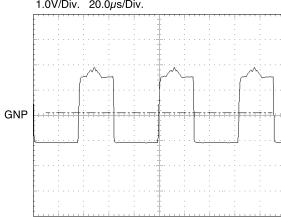
14 - BASE Q402 2.0V/Div. 10.0μs/Div.



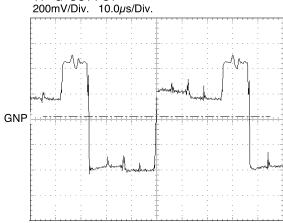
3 - PINO # 19 IC501 500mV/Div. 20.0µs/Div.



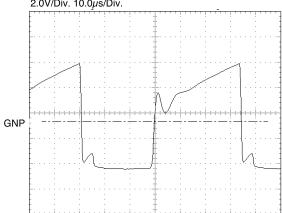
7 - PINO # 40 IC501 1.0V/Div. 20.0µs/Div.

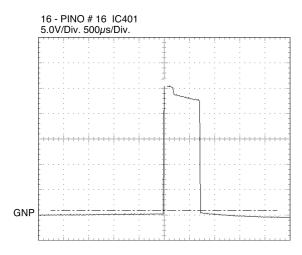


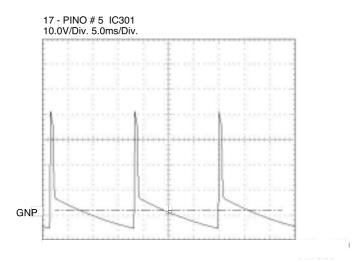
11 - G OUT PUT

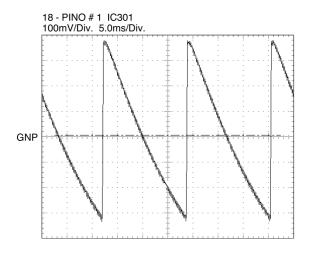


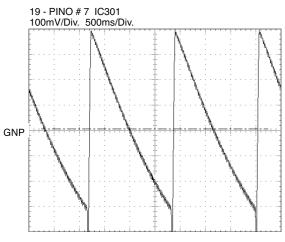
15 - COL Q401 (X10) 2.0V/Div. 10.0µs/Div.











VOLTAGE CHARTS

IC301

PIN#	VOLTAGE (V)
1	0.5
2	12.8
3	-10.4
4	-11.8
5	0.082
6	13
7	0.5

IC601, IC602

PIN#	VOLTAGE (V)					
1	0					
2	5.7					
3	14.9					
4	11.9					
5	1.1					
6	6.6					
7	3.4					
8	2.8					
9	0					

IC603

VOLTAGE (V)
3.6
2.4
3.6
1.3
2.5
0
0
0
0
5
0
3.6
3.6
2.4
2.4
4.9

IC501

	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	0	29	0
2	3.6	30	2.2
3	0	31	2.2
4	0	32	2.2
5	2.5	33	0
6	3	34	2.4
7	4.4	35	2.4
8	4.4	36	4.6
9	6.6	37	8
10	1.4	38	2.4
11	3.3	39	4.9
12	8.1	40	1.2
13	3.7	41	0.6
14	0	42	3.1
15	3	43	3.9
16	1.5	44	-2.2
17	3.3	45	0
18	5.9	46	05
19	3.0	47	06
20	3.0	48	4.6
21	3.0	49	4.6
22	3.0	50	1.9
23	1.9	51	3.8
24	0	52	3.8
25	0	53	4.4
26	0	54	0.9
27	2.7	55	2.8
28	2.7	56	0

IC604

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	2.9	27	3.5
2	2	28	0
3	3.6	29	3.4
4	0	30	3.5
5	3.5	31	3.6
6	0	32	3.5
7	0		
8	4.4		
9	4.4		
10	8.5		
11	3.5		
12	8.5		
13	3.5		
14	3.6		
15	3.5		
16	2.9		
17	5.4		
18	3.6		
19	3.5		
20	3.5		
21	3.6		
22	3.6		
23	3.6		
24	3.6		
25	3.5		
26	3		

IC701

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	0	27	6
2	0	28	4.9
3	3	29	4.9
4	0	30	4.9
5	0	31	4.9
6	0	32	4.9
7	0	33	0
8	0	34	0
9	0	35	2.4
10	0	36	2.2
11	0	37	1
12	0	38	4.9
13	0	39	0
14	0	40	-
15	0	41	0
16	0	42	4.9
17	4.9	43	0
18	4.9	44	4.9
19	0	45	2.7
20	0	46	4.9
21	4.9	47	0
22	4.9	48	0
23	0	49	0
24	4.9	50	4.9
25	4.9	51	4.9
26	4.9	52	0

IC702

PIN#	VOLTAGE (V)
1	0
2	0
3	0
4	0
5	5
6	5
7	0
8	5

IC703

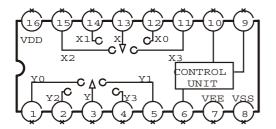
PIN#	VOLTAGE (V)
1	5
2	0
3	5

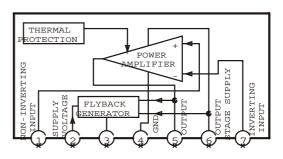
IC801

PIN#	VOLTAGE (V)
1	2.5
2	0
3	0
4	2.39
5	1.95
6	3.6
7	18
8	5

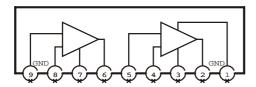
IC901

PIN#	VOLTAGE (V)
1	2.9
2	2.8
3	3
4	0
5	6
6	175
7	101
8	115
9	115

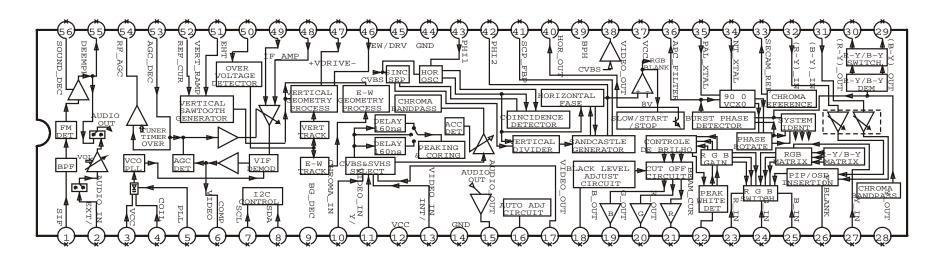


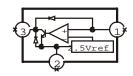


IC, TDA1013B

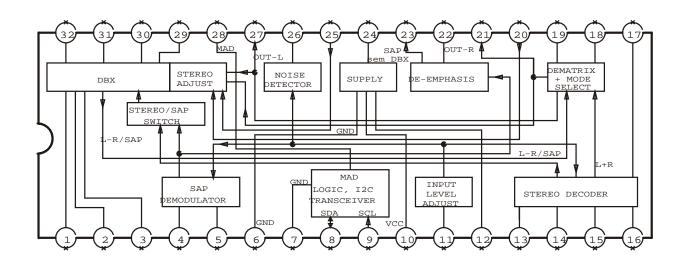


IC, TDA8841 IC, TL431

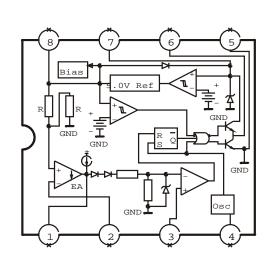




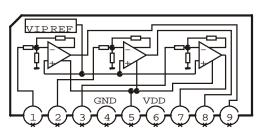
IC, TDA9850



IC, UC3842B



IC, TDA6107Q/N1



INTRODUCTION

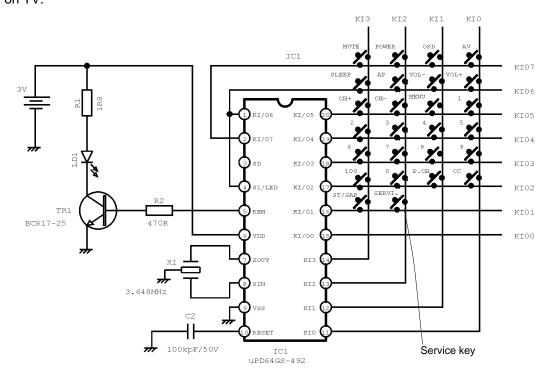
Note:

It is necessary to pre-heat the TV during 15 minutes, before its calibration.

- 1) Important recommendations
- 2) Definitions of the terms
- 3) Geometry of the Image
- 4) White Balance
- 5) Screen adjustment
- 6) AGC adjustment

How to select the FACTORY MODE

- a) Short to ground pin 24 of IC701 (momentarily) on the MAIN PWB or use a remote control with protocol RC5 and system 7.
- a1) Remote control reconstruction method.
 Connection SW between pin13 and 16 of the IC: Pressing the SW will display the test mode screen on TV.



b) Select the adjustment options pressing the key CH♠ or CH ¥ of the remote control or of the television front panel.

Note: All the adjustment options can be selected directly by the remote control numeric keys.

- c) Adjust the selected option pressing the key VOL> or <VOL of the remote control or of the television front panel.
 - **c1) VOL > -** increases registers (MAX.).
 - **c2) ≺VOL** decreases registers (MIN.).
- d) To exit the FACTORY MODE, use the key OSD/OUT of the remote control.

1. Important recommendations

- **1.1** Before beginning the adjustments, the TV set should be a pre-heated during at least 15 minutes.
- 1.2 The positioning of the TV set should obey the magnetic parameters of South America that it is -120 vertical mG. In the practice, this is gotten with a relative precision, positioning the TV set with the face (screen) of the CRT pointing to the geographical East.

2. Definitions of the terms

Description f service and factory registers					
Register	Name	Range	Description	Descrição	Reference adjustment valu
00	HSh	063	Horizontal Shift	Posição Horizontal	42
01	HWi	063	Not used	N o Usado	-
02	HPW	063	Not used	N o Usado	-
03	HCP	063	Not used	N o Usado	-
04	HTC	063	Not used	N o Usado	-
05	VSI	063	Vertical Slope	Aj. Linearidade vertical no "topo"	34
06	VAm	063	Vertical Amplitude	Aj. de altura	27
07	VSc	063	S-Correction	Aj. Linearidade vertical no "centro"	10
08	VSh	063	Vertical Shift	Posição Vertical	38
09	WPR	063	White point R.	Ganho R	31
10	WPG	063	White point G.	Ganho G	31
11	WPB	063	White point B.	Ganho B	31
12	AGC	063	AGC Take Over	Aj. De atraso do AGC	15
13	PLL	0127	IF-PLL adjustment	Ajuste de IF-PLL	32
14	VZo	063	Not used	N o Usado	-
15	VSR	063	Not used	N o Usado	-
16	CT2	0255	See description below	Veja a descri o a seguir	136
17	CT3	0255	See description below	Veja a descri o a seguir	07
18	CT4	0255	See description below	Veja a descri o a seguir	168
19	CT5	0255	See description below	Veja a descri o a seguir	04
20	Bit	0255	See description below	Veja a descri o a seguir	00
21	OP1	0255	See description below	Veja a descri o a seguir	01
22	OP2	0255	See description below	Veja a descri o a seguir	145
23	OP3	0255	See description below	Veja a descri o a seguir	255
24	OP4	0255	See description below	Veja a descri o a seguir	33
25	OP5	0255	See description below	Veja a descri o a seguir	14
26	LA	015	Input level adjustment	N vel de ajuste de udio	07
27	ALS	031	Alignment for spectral	Aj. de separa o de est reo	15
28	ALW	031	Alignment for wideband	Aj. de separa o de est reo	15
29	STT	003	Stereo noise threshold	Aj. de sensibilidade de est reo	08
30	SPR	000	SAP noise threshold	Aj. de sensibilidade SAP	08
31	BRI	099	Default Brightness	Brilho	58
32	CON	099	Default Contrast	Contraste	99
33	COR	099	Default Color	Cor	55
34	NIT	099	Default Sharpness	Nitidez	45
35	MAT	099	Default Hue	Matiz	50
36	VOL	099	Default Volume	Volume	00
37	AAL	000	Not used	N o Usado	-
38	CHN	000	Change channel in	Seleção de canais no modo fábrica	03
	0		factory mode		
39	InF	000	Initialize factory	Inicialização da EEPROM	00
			parameters		
40	Inc	000	Initialize channels	Inicialização dos canais	00
			parameters		
41	Scr	000	Vertical out on/off	Deflexão Vertical L: gado/Desi: gado	00
				ustment value, and them perform.	

Nota:

* Estes ajuste não devem ser alterados em hipótese nenhuma, caso isto ocorra a EEPROM deverá ser inicializado novamente (Selecione e execute o registrador 39).

Initial conditions about some features after reset are: DSC off, Portuguese to language, blue background off and Closed Caption off.

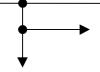
Binary description about some registers:

Register 20 (BIT)		
BIT		Description
Bit0	Not-used	Not used
Bit1	HBL	Normal Blanking
Bit2	IFS	IF Sensitive
Bit3	COR	Noise coring
Bit4	EVG	Vertical guard
Bit5	STM	Search tuning mode
Bit6	LBM	Blanking mode
Bit7	VID	Video ident mode

Reg	Register 21 (OP1)		
BIT		Description	
Bit0	-	Force vertical in 60Hz	
		(Automatic Programming)	
Bit1	-	Stereo menu (AV mode)	
Bit2	FOA	Phase timing const. #1	
Bit3	FOB	Phase timing const. #2	
Bit4	BCO	ON/OFF behavior	
Bit5	-	Aiwa indication	
Bit6	POC	POC control ⇒ POC off=1	
	control.		
Bit7	Not used	Not used	

Register 22 (OP2)		
BIT		Description
Bit0	-	Field indicator is inverted or
		no
Bit1	-	Field selection to 50 Hz
Bit2	-	Field selection to 60 Hz
Bit3	VPD	VPD Vertical Pulse Delay
Bit4	PW0	PW0 vertical sync Pulse
		Width 0
Bit5	PW1	PW1 vertical sync Pulse
		Width 1
Bit6	VR0	VR0 Voltage Reference 0
Bit7	VR1	VR1 Voltage Reference 1

Register23 (OP3)		
BIT		Description
Bit0	-	C.C initial pos. set 0 – 60Hz
Bit1	-	C.C initial pos. set 1 – 60Hz
Bit2	-	C.C initial pos. set 2 – 60Hz
Bit3	-	C.C initial pos. set 3 – 60Hz
Bit4	-	C.C initial pos. set 0 – 50Hz
Bit5	-	C.C initial pos. set 1 – 50Hz
Bit6	-	C.C initial pos. set 2 – 50Hz
Bit7	-	C.C initial pos. set 3 – 50Hz



	VPD
0	VSYNC input is delayed by 8 to 24 µs before field detection
1	VSYNC input is not delayed

VR1	VR0	NominalBias
0	0	3.12 V
0	1	2.98 V
1	0	2.84 V
1	1	2.70 V

PW1	PW0	Pulse Width
0	0	8 µs
0	1	10 μs
1	0	12 μs
1	1	14 μs

Note:

The **register 22 (OP2)** is used to make adjustment about some Closed Caption parameters in the microcontroller.

The **register 23 (OP3)** is used to make vertical positioning of Closed Caption in the microcontroller.

Register24 (OP4):

This register has CC line number - (Low nibble to 60Hz and high nibble to 50Hz)

The Bits 0,1,2,3 are used to select the line where Closed Caption information will be extracted when in 60Hz, and the bits 4, 5, 6, 7 are used to select the line where Closed Caption information will be extracted when in 50Hz

Note:

This information is used by microcontroller.

Register2 5 (OP5)		
BIT		Description
Bit0	-	Horizontal Delay 0
Bit1	-	Horizontal Delay 1
Bit2	-	Horizontal Delay 2
Bit3	-	Horizontal Delay 3
Bit4	-	Not used
Bit5	-	Not used
Bit6	-	Not used
Bit7	-	Not used

Regis	Register 16 (CTRL2)				
BIT		Description			
Bit0	BB	Blue back off			
Bit1	CS0	2 ^{and} CVBS output			
Bit2	CS1	2 ^{and} CVBS output			
Bit3	BKS	Black Stretch mode			
Bit4	BLS	Blue Stretch mode			
Bit5	СВ	Chroma band pass freq.			
Bit6	VSD	Vertical scan active			
Bit7	OSC	Switch off in vertical overscan			

Note:

The **register25 (OP5)** is used to make horizontal positioning of Closed Caption in the microcontroller. Forced color on.

Register 17 (CTRL3)				
BIT		Description		
Bit0	CL0	Cathode driver level		
Bit1	CL1	Cathode driver level		
Bit2	CL2	Cathode driver level		
Bit3	AST	Automatic mode		
Bit4	CMB	Ext. comb filter on/off		
Bit5	ACL	Automatic color limit		
Bit6	BPS	By pass delay line		
Bit7	HOB	Output blanking		

Register 18 (CTRL4)			
BIT		Description	
Bit0	EBS	Extend Blue Stretch	
Bit1	FFI	Fast filter IF PLL	
Bit2	DSA	Dynamic skin control angle	
Bit3	DS	Dynamic skin control	
Bit4	ID0	Y delay adjustment	
Bit5	ID1	Y delay adjustment	
Bit6	ID2	Y delay adjustment	
Bit7	ID3	Y delay adjustment	

Register 19 (CTRL5)				
BIT		Description		
Bit0	FCO			

3. Geometry of the Image

- a) Using the PM 5515 generator, apply the crosshatch pattern with circle.
- b) Adjust the following items:

Vertical slope (VSI);

Height (VAm);

Vertical position (VSh);

Center Linearity (VSc);

Horizontal position (HSh)

Adjust the above items, until obtaining the best circle symmetry and positioning, as well as the minor image geometric distortion.

4. White balance

Note:

The cut point doesn't need adjustment, because it's automatically made by the IC501.

The white adjustment is already pre-adjusted and incised in the IC501 and, thus, its adjustment is not necessary.

Otherwise, if it is necessary to change the temperature of the white pattern, proceed in the following way:

- a) Enter in the service mode.
- b) Select via CHA or CHY the WPR (09), WPG (10) and WPB (11) functions.
- c) Increase or decrease the function via VOL≯ or via ≺VOL respectively.

5. Screen adjustment

- a) Select the register 41 (Scr).
- b) Press VOL ➤ to access and adjust the screen control localized on the FBT, until the horizontal line be slightly visible on the screen center.

6. AGC adjustment

a) Select the regiter12 (AGC)

Apply a PHILIPS pattern with $60dB_{\mu}V$ of intensity and adjust the delay until obtain 3.5V in AGC pin of tuner.

アイワ株式会社〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表) **AIWA CO., LTD.** 2–11, IKENOHATA 1–CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111

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